

Gulf of the Farallones NMS Program Areas Matrix

GULF OF THE FARALLONES NATIONAL MARINE SANCTUARY				
Issue	Education & Outreach	Research & Monitoring	Resource Management/Policy	Notes
<p><u>Administration</u></p> <ul style="list-style-type: none"> Develop increased operational efficiency and program consistency Expand infrastructure to support program development Increase exposure through the expansion of field offices 	<ul style="list-style-type: none"> Hold bi-annual education workshop with CB (c) 	<ul style="list-style-type: none"> Continue bi-annual research workshop with CB (c) Continue to support creation of science lab Complete site characterization: habitat characterization, species inventory 	<ul style="list-style-type: none"> Evaluate need for and benefits of boundary adjustment between GF and MB Establish handicap accessible meeting area and oil spill processing facility Continue developing SAC's advisory role in resource management issues Hire a policy/permit analyst Hire Estuarine Specialist Hire Information Technology Specialist (c) Hire full time bio-tech vessel captain Better coordinate co-management among sanctuaries Establish visitors centers and field offices at Pt. Reyes, Bodega Bay, Half Moon Bay Evaluate need for and benefits of boundary expansion to the north and west (specifically to prevent new oil drilling)) 	

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<p><u>Ecosystem Protection</u></p> <ul style="list-style-type: none"> • Direct research, monitoring, and regulatory efforts to help protect biodiversity and provide support for making resource management decisions • Evaluate boundary alternatives by investigating ecological linkages between GFNMS and areas to the north, south, and west • Develop a plan to address new and emerging issues • Direct restoration efforts towards increasing ecosystem protection • Evaluate how to address impacts from fishing activities • Develop process for identifying and addressing new and emerging issues 	<ul style="list-style-type: none"> • Continue Coastal Ecosystem High School Program: includes Teacher workshop, curriculum on coastal ecosystem, and a student monitoring program (supported by restoration funds) • Develop exhibits and signs on Sanctuary habitat for resident and migratory species. Use existing space at Pt. Reyes and California Academy of Sciences (and any other facilities) (c) • Expand docent program to address wildlife disturbances • Hold education symposium jointly with research symposium every other year, with Cordell Bank (c) • Continue participation in West Coast Student Monitoring Network (migrant) (c) • Establish visitors centers and exhibits at Bodega Bay and Half Moon Bay • Maintain Common Murre 	<ul style="list-style-type: none"> • Complete site characterization: habitat characterization, species inventory • Expand Ecosystem Dynamics Study monitoring to year round. EDS is an assessment of physical and biological features of the Gulf of Farallones ecosystem, with emphasis on distribution and abundance of krill, marine mammals, and seabirds (c) • Continue intertidal monitoring to assess change over time • Continue Beach Watch: a long-term volunteer beach monitoring project aimed at early detection of human or natural disturbances • Update 1980s GIS on bathymetry, sediments, seabird and marine mammals of GF (Bonnell and Ford, early 1990s) (c) • Support expansion of CODAR system around Gulf (radar system) 	<ul style="list-style-type: none"> • Evaluate need for and benefits of boundary adjustment between GFNMS and MBNMS (also see admin) • Continue involvement in MLPA Process • Maintain current permit ability to control potentially harmful activities in the Sanctuary • Continue participation in restoration projects for seabirds • Continue participation in restoring a Common Murre breeding colony • Continue participation in restoring previously filled habitat (Bollinas Lagoon and Tomales Bay) • Continue information exchange with other Federal agencies on fisheries and endangered species in Sanctuary (NMFS, USFWS, EPA, USGS) • Maintain existing Long Term Management Strategy Dredge Disposal Plan- no disposal allowed 	

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<u>Ecosystem Protection</u> <u>(Continued)</u>	<p>restoration exhibits at Crissy Field Visitors Center, Pacifica</p> <ul style="list-style-type: none"> Establish Resource Protection Education (RPE): outreach targeting user groups on GFNMS regulations, guidelines and best management practices for resource users (work with GFNMS partners such as NOAA special agents on interpretive enforcement) (c) Expand Teacher at Sea Expand and focus lecture series to include biodiversity protection themes and issues Develop seabird web-based live uplink and kiosk components 	<p>mapping surface currents) (partner with OSPR,BML, NPS)</p> <ul style="list-style-type: none"> Establish long-term coordinated water quality program focused on estuaries GF should provide support for seabird colony aerial surveys and database maintenance throughout CA (c) Assess the effectiveness of docent/ outreach programs that address wildlife disturbance 	<ul style="list-style-type: none"> Continue to participate on Advisory Committees, Technical Committees, Trustee Councils, and Area Committees Participate in SF National Estuarine Research Reserve Advisory Council Obtain adequate research support Evaluate need for and benefits of boundary expansion to the north and west (specifically to prevent new oil drilling) (also see admin) Increase compliance of regulations through interpretive enforcement and/or writing tickets. (Team Ocean Model) Include harbor and marina education 	

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<p><u>Exotic/Invasive Species</u></p> <ul style="list-style-type: none"> Identify pathways of introduction Identify and monitor already introduced species Develop response and removal strategies Develop coordinated effort to prevent future introductions 	<ul style="list-style-type: none"> Develop and distribute materials to public to identify and report exotic species Work with NOS, ports, and vessel traffic to develop wide-scale education of maritime shipping industry and public on introductions and pathways 	<ul style="list-style-type: none"> Inventory locations where invasive species have been introduced Develop monitoring program (volunteers) to detect invasive species Identify pathways of introduction 	<ul style="list-style-type: none"> Participate in interagency taskforce to develop agreement on prevention, detection, response, mitigation, and restoration Work with state and USGS on ballast management 	
<p><u>Fishing Activities</u></p> <ul style="list-style-type: none"> Define Sanctuaries' role in fisheries management Impacts from krill harvesting to biomass, primary productivity, and trophic disruptions Benthic habitat impacts from fishing gear Evaluate sanctuaries' need for marine reserves 	<ul style="list-style-type: none"> Continue Sustainable Seafood Coalition. It educates public and industry on sustainable fishing practices 	<ul style="list-style-type: none"> Expand use of ROVs to visually assess gear presence in Sanctuary habitats (part of habitat characterization) Work cooperatively with NMFS where possible on determining key species Standardize ROV and DELTA protocols between sanctuaries and enter data into GIS 	<ul style="list-style-type: none"> Work closely with commercial and sport fishermen to evaluate fishery issues as they arise (PCFFA, IFR) Continue involvement in MLPA process Develop policy on sanctuaries' role in fisheries management based on biodiversity and ecosystem protection 	

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<p><u>Mariculture</u></p> <ul style="list-style-type: none"> Assess impacts from discharges, seabed disturbances, and exotic species Assess impacts from extirpation of habitat strata from the ecosystem as a whole 	<ul style="list-style-type: none"> Develop education program on introduction and identification of invasive species Educate user groups on best management practices (see also Exotic/Invasive Species) 		<ul style="list-style-type: none"> Propose regulatory action, if deemed appropriate Participate on Exotic Species Task Force Train staff on regulation status and authority over mariculture activities 	
<p><u>Radioactive Waste</u></p> <ul style="list-style-type: none"> Complete investigation into status of waste site Determine potential impacts to marine life and humans. Develop and distribute informational public outreach materials 	<ul style="list-style-type: none"> Coordinate better distribution of USGS publication (<i>Beyond the Golden Gate</i>) Educate public on current status of site and work being done. Hold educational workshop to educate media and public, bring together experts Work with a SAC working group to educate public 	<ul style="list-style-type: none"> Use information from limited exploratory testing of substrates and ground fish in radioactive dumpsites Continue to co-lead interagency taskforce Develop cooperative research and monitoring effort plan with existing working group 	<ul style="list-style-type: none"> Create taskforce following completion of research to address radioactive waste; contract white paper, develop interagency plans to fill data gaps, communicate outcome to public 	

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<p><u>Vessel Traffic</u></p> <ul style="list-style-type: none"> Evaluate TSS lanes Address vessel impacts; including discharge (ballast exchange, oil spill potential, noise, and air emissions), vessel strikes 	<ul style="list-style-type: none"> Get GF on all nautical charts (c) Continue Tidebook distribution listing tide levels and regulations Educate industry vessel operators (particularly cruise lines) Establish Resource Protection Education targeting user groups (RPE) (see RPE under Ecosystem Protection) (c) 		<ul style="list-style-type: none"> Work with MMBS, IMO and USGS to re-evaluate recommended traffic lanes Maintain regulation prohibiting oil tankers, barges, cargo vessels within 2 nm of Farallon Islands, Bolinas Lagoon, and ASBS (Areas of Special Biological Significance) Enforce regulation prohibiting discharge into Sanctuary 	
<p><u>Water Quality</u></p> <ul style="list-style-type: none"> GFNMS is vulnerable to offshore and land-based pollution including livestock grazing, agricultural runoff, improperly treated effluent, dumping, and mercury from abandoned mines Estuaries are particularly sensitive habitats and need protection from water pollution Develop regulatory/ 	<ul style="list-style-type: none"> Continue to fund NPS' Adopt-a-Beach Program (Ocean Beach clean ups) Use radio, TV, and other multimedia in coordination with local and state Water Quality Agencies as outreach tools to inform public of human impacts on water quality Develop estuary volunteer monitoring, possibly with local high schools Work with agriculture industry on best management practices 	<ul style="list-style-type: none"> Establish long-term coordinated water quality program on estuaries Continue to assist CA State Dept of Health monitoring harmful algal blooms and biotoxins Continue to locate sources of oil pollution from sunken vessels Work w/ Status & Trends to evaluate persistent organic pollutants and heavy metals Acquire better understanding of currents and circulatory patterns and integrate into GIS (c) 	<ul style="list-style-type: none"> Participate in interagency projects, data exchange, and encouragement of better management practices Partner with CA Coastal Commission and other state and federal agencies in coordinating their water quality programs, specifically on coastal areas that impact the Sanctuary 	

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administrative path with other agencies to address water quality impacts quickly		<ul style="list-style-type: none"> Using Sea Watch, carry out at-sea, year-round water quality monitoring 		
<p><u>Wildlife Disturbance</u></p> <ul style="list-style-type: none"> Minimize impacts from observing and interacting with wildlife, including: flushing birds from their nests, disturbing pinnipeds and trampling tide pools Evaluate the use of regulatory and non-regulatory actions to address wildlife disturbance 	<ul style="list-style-type: none"> Continue volunteer education and monitoring programs (SEALS and Beach Watch) (See Ecosystem Protection and Water Quality) Maintain Duxbury Reef kiosk on tidepool ecology & wildlife viewing guidelines Expand exhibits on Watchable Wildlife and disturbance issues to high visitation sites such as Bolinas Lagoon. Establish Resource Protection Education (see RPE in Biodiversity Protection) (c) Expand lecture series to include wildlife disturbance as a topic 	<ul style="list-style-type: none"> Evaluate need for additional disturbance reduction programs Sanctuary participate in NOS and NMFS efforts to evaluate the effects of noise pollution on wildlife distribution and behavior 	<ul style="list-style-type: none"> Enforce prohibition banning use of personal watercraft Enforce prohibition on all oil and gas development Enforce prohibition on discharging or depositing any materials into the sanctuary Enforce prohibition on altering the seabed Develop regulations to address wildlife interaction (other than marine mammals, i.e. white sharks) 	

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